



REGISTERED DATA SHEET PERFORATING SYSTEM EVALUATION, API RP 19B SECTION 1

Service Company Available to all Design Number _____ Explosive Weight 32 gm, RDX powder, Case Material Steel
 Gun OD & Trade Name 4" High Shot Density Gun,RDX Max. Temp, °F 330 1 hr 305 3 hr 260 24 hr 230 100 hr _____ 200 hr _____
 Charge Name 4" Barracuda 32 gms RDX (DSC 03-02-18) Maximum Pressure Rating 20.000 psi, Carrier Material Steel
 Manufacturer Charge Part No. TC27R Date of Manufacture Feb 06th 2003 Shot Density Tested _____ 6 _____ Shots/ft
 Gun Type High Shot Density Gun 6 SPF 60° WL/TCP Recommended Minimum ID for Running _____ in.
 Phasing Tested 60 degrees, Firing Order X Top Down, _____ Bottom Up Available Firing Mode _____ Selective, _____ Simultaneous
 Debris Description _____ N/A Debris Weight _____ N/A gm/charge, Debris _____ N/A in³/charge
 Remarks Gun OD After shooting in Liquid 4.47In., in air 4.56In.

SECTION 1 - CONCRETE TARGET

Casing Data 5 1/2" OD, Weight 17 lb/ft, L-80 API Grade, Date of Section 1 Test March 11th 2003
 Target Data 90" OD, Amount of Cement 9555 lb., Amount of Sand 19110 lb., Amount of Water 4970 lb.
 Date of Compressive Strength Test March 11th 2003, Briquette Compressive Strength 5812 psi, Age of Target 32 days

Shot No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11	
Clearance, in.....	0.00	0.192	0.638	0.892	0.638	0.192	0.00	0.192	0.638	0.892	0.638	
Casing Hole Diameter, Short Axis, in..	0.412	0.394	0.391	0.416	0.390	0.458	0.390	0.403	0.425	0.415	0.451	
Casing Hole Diameter, Long Axis, in. .	0.418	0.409	0.435	0.425	0.415	0.461	0.405	0.411	0.458	0.426	0.452	
Average Casing Hole Diameter, in.....	0.415	0.402	0.413	0.421	0.403	0.460	0.398	0.407	0.442	0.421	0.452	
Total Depth, in.	38.830	36.580	38.330	40.830	39.080	39.830	32.080	39.330	37.080	37.580	32.830	
Burr Height, in.....	0.040	0.073	0.053	0.056	0.061	0.052	0.088	0.074	0.057	0.056	0.085	
Shot No.	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20	No. 21	No. 22	Average
Clearance, in.....	0.192	0.00	0.192	0.638	0.892	0.638	0.192	0.00	0.192			0.392
Casing Hole Diameter, Short Axis, in..	0.404	0.390	0.384	0.374	0.401	0.415	0.400	0.436	0.407			0.408
Casing Hole Diameter, Long Axis, in. .	0.419	0.409	0.388	0.417	0.459	0.416	0.415	0.438	0.432			0.425
Average Casing Hole Diameter, in.....	0.412	0.400	0.386	0.396	0.430	0.416	0.408	0.437	0.420			0.417
Total Depth, in.	33.830	36.455	36.330	35.830	37.330	33.830	31.830	34.830	35.830			36.424
Burr Height, in.....	0.097	0.031	0.090	0.029	0.078	0.077	0.081	0.030	0.034			0.062

WITNESSING INFORMATION

Date of Notice of Intent to Test: Jan 03rd 2003 Witnessed by: [Signature] Smirnoff (API Certified)
 Other Activities Witnessed: Target Pouring _____ Briquette: Preparation _____ Testing X Burr Height Measurement X Samples Taken: Concrete X Casing X

CERTIFICATION

I certify that these tests were made according to the procedures as outlined in API RP 19B: Recommended Practices for Evaluation of Well Perforators, First Edition, November 2000. All of the equipment used in these tests, such as the guns, jet charges detonator cord, etc., was standard equipment with our company for the use in the gun being tested and was not changed in any manner for the test. Furthermore, the equipment was chosen at random from stock and therefore will be substantially the same as the equipment, which would be furnished to perforate a well for any operator. The American Petroleum Institute neither endorses these test results nor recommends the use of the perforator system described.

X CERTIFIED BY [Signature] DARIO E. RAFFINO Perforating Projects Manager 03/12/2003 Explosivos Tecnológicos Argentinos S.A. Ruta 25Km.13 Pilar- Bs.As. Argentina
 _____ RECERTIFIED _____ (Title) (Date) (Company) (Address)